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SUBSTITUTE SPECIFICATION
(CLEAN VERSION)



METHOD FOR MANUFACTURING AN ELECTRON SOURCE SUBSTRATE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a method for manufacturing an electron source substrate to be used in an electron beam device and an image forming device such as an image display device or an application of the electron beam device.

2. Description of the Related Art

The electron source substrate of this kind is provided with a plurality of electron emission elements constructing an electron emission portion. As the electron emission elements, there are generally known two kinds a thermal electron source and a cold cathode electron source. The cold cathode electron source is divided into a field emission element (FE element), a metal-insulator-metal element (MIM element), a surface-conduction electron-emitting element (SCE element), and so on.

Fig. 16 is a diagram showing an element construction of M. Hartwell as a typical element construction of the surface-conduction electron-emitting element. In Fig. 16: numeral 1 designates a substrate; numerals 2 and 3 element electrodes; numeral 4 a conductive thin film; and numeral 5 an electron emission portion.

The surface-conduction electron-emitting element thus constructed has an especially simple structure of the cold cathode electron source and can be easily manufactured. Therefore, the surface-conduction electron-emitting element has an advantage that a multiplicity of elements can be formed over a wide area.